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(71)(72) Applicants and Inventors: GERADTS, Robert [NL/NL]; Joris van Andringastraat 23h, NL-1055 VW Amsterdam (NL). VAN HOOF, Petrus, Wilhelmus, Johannes [NL/NL]; KNSM-laan 669, NL-1019 LH Amsterdam (NL).

(74) Agent: VAN DER AREND, A., G., A.; Van Exter Polak & Charlouis B.V., P.O. Box 3241, NL-2280 GE Rijswijk (NL).

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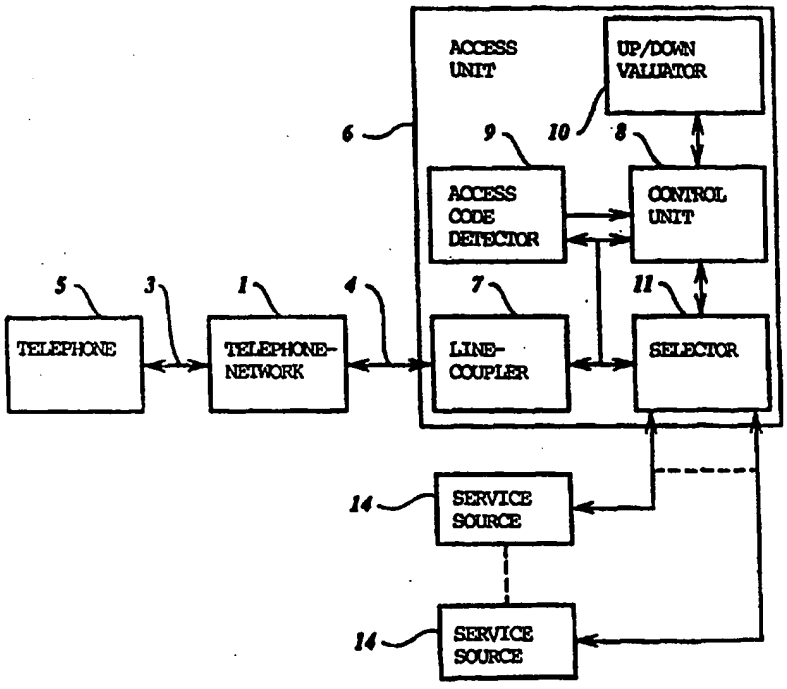
(54) Title: METHOD FOR PROVIDING ACCESS TO PRE-PAID TELEPHONE SERVICES

(57) Abstract

Method, telephone terminal and telephone exchange for supplying a paid service within a telephone system from a service source which is suitable for supplying a publicly accessible pay service to a telephone terminal, comprising a user of the telephone terminal making a telephone connection to the service source, in which case the user is given an access code, an operator of an access unit to the service source monitors a debit balance corresponding to the access code, in order to gain the desired access to the service source the user makes an ordinary telephone connection of a type to which an ordinary call tariff applies with the access unit, the user communicates the access code via the connection, the operator of the access unit checks whether the access code received is correct and allows access if the access code received is correct and the corresponding debit balance is sufficient, and the operator of the access unit reduces the debit balance in accordance with the access provided to the service source and breaks off the connection after the debit balance has become insufficient.



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METHOD FOR PROVIDING ACCESS TO PRE-PAID TELEPHONE SERVICES.

The invention relates to a method for supplying a paid service within a telephone system from a service source which is suitable for supplying a publicly accessible pay service to a telephone terminal, comprising a user of the telephone terminal making a telephone connection to the service source.

A method of the abovementioned type is known in practice. In the case of the known method, in order to gain access to a service source, the user of the telephone terminal, which in particular is a telephone, can dial a special number (what is known as a value-added service number - in the Netherlands a number beginning 06), for which the operator of the telephone network charges a relatively high tariff, one which is higher than for connections for ordinary calls, and which depends on the type of service requested. In this case the operator of the telephone network shares the income with the operator of the service source, the operator of the telephone network often receiving over 40% of the income. The known method has various disadvantages. One disadvantage is that relatively expensive telephone connections linked to special telephone numbers are used. Another disadvantage is that the cost of using such special numbers often appears as a separate cost item for such telephone numbers on a bill received from the operator of the telephone network, which for some users, however respectable the service provided may be, can lead to awkward situations with those with whom they live. This can produce an undesirable barrier to the use of such a service source, which may be a social service helpline. Yet another disadvantage is that, in the absence of any barrier to access to service sources which can be reached through such special telephone numbers, in particular service sources which are intended for the user's pleasure, for which extra-high tariffs often apply, addiction can easily occur, with unexpectedly very high bills afterwards. Yet another disadvantage is that a

telephone subscriber who receives bills from the operator of a telephone network containing cost items for the use of such service sources with the special telephone numbers, and who maintains that he knows absolutely nothing about these or considers it impossible that he could have used them, has little or no chance of success in appealing against these high bills. The telephone subscriber is in fact usually in a weak position as regards proof of incorrect recording by the operator, because the operator's accounts are generally contractually indisputable, and the subscriber generally does not have the technical knowledge of the telephone network to be able to prove whether possible misuse by third parties, for example through breaking into the telephone network, are possible at his expense.

Yet another disadvantage is that the abovementioned special numbers cannot be dialled from abroad, which means that the services concerned are inaccessible from abroad.

The object of the invention is to eliminate the abovementioned disadvantages.

This object is achieved for the method of the type mentioned in the preamble through the fact that according to the invention the user is given an access code, an operator of an access unit to the service source monitors a debit balance corresponding to the access code, in order to gain the desired access to the service source the user makes an ordinary telephone connection of a type to which an ordinary call tariff applies with the access unit, the user communicates the access code via the connection, the operator of the access unit checks whether the access code received is correct and allows access if the access code received is correct and the corresponding debit balance is sufficient, and the operator of the access unit reduces the debit balance according to the access provided to the service source, and breaks off the connection after the debit balance has become insufficient.

The invention also relates to a telephone terminal according to Claim 7.

The invention also relates to a telephone exchange

according to Claim 10.

It is pointed out that telephone systems are known in practice whereby a user of a telephone gains access to an information source by dialling a special telephone number (value-added service number - in the Netherlands beginning 06) at a tariff determined by the service being sought, and after entering the correct access code. The information source is operated by a banking institution and provides clients of the banking institution with information from their respective bank accounts after they have entered their bank account number and a personal identification number. The information source therefore does not provide information which is accessible to all, and does not provide the possibility of information being furnished for a certain connection time or a certain number of times that a connection is made, and which has been paid for in advance. Besides, the information source is not accessible by way of a telephone connection intended for normal calls, nor is it accessible from abroad.

Other features and advantages of the invention will emerge from the following explanation with reference to the drawings, in which:

Fig. 1 shows a diagram of a telephone system with an access unit according to the invention;

Fig. 2 shows a flow chart for explaining how the system according to Fig. 1 works; and

Fig. 3 shows a diagram of a telephone system with a telephone exchange which has an access unit according to the invention.

Fig. 1 shows a diagram of a telephone system, comprising a generally known telephone network 1, which can comprise one or more telephone exchanges. The telephone network comprises a number of communication lines or telephone lines, which in general - and certainly in this patent application - also includes wireless connections, to subscribers, only two lines 3, 4 of which are shown in Fig. 1. The telephone line 3 is connected to a telephone terminal, in particular a telephone 5. The telephone line 4 is connected to an access unit 6 according to the

invention. The access unit 6 comprises a line coupler 7, which is connected to the telephone line 4, a control unit 8, an access code detector 9, an up/down valuator 10 and a selector 11. An output connection of the line coupler 7 connected to the telephone line 4 is connected to the control unit 8, the access code detector 9 and the selector 11. Output connections of the selector 11 are connected to respective service sources 14, which can be publicly accessible service sources insofar as a person seeking access has proved to have authorization in the manner explained below according to the invention. The system can also be equipped with a single electrically operated switch instead of the selector 11, for the purpose of connecting the line coupler 7 to only one service source 14.

The service sources 14 may be conventional service sources with their own line coupler. Moreover, if the service sources 14 are sources which supply messages prestored in a memory, the access unit 6 may be an integral unit with one or more of such service sources 14, in particular a computer.

Through prepayment to an operator of a service source 14, a user of the telephone 5 can gain access according to the invention to the service source via the telephone network 1 and the access unit 6 corresponding to the service source. In this case the telephone lines 3 and 4 can be ordinary telephone connections for which an operator of the telephone network 1 charges at an ordinary call tariff, i.e. independently of the service supplied by a service source 14. The user of the telephone 5 has access to the desired service source 14 only after the user has identified himself to the operator as an authorized user by means of an access code. No identification of the person himself, for example by name and address, is necessary, but the access code used can be an identification code provided in any manner anonymously to the person, or - possibly in combination - it can be by voice recognition. The operator can identify the voice of the user on a first acquaintance prior to payment of a sum to the operator, during which acquaintance the operator gives the person an access code

corresponding to the voice characteristics established in the process (or possibly a provisional auxiliary access code), so that the person can state the access code when paying the demanded sum, with the result that on receipt of the sum the operator can make the connection between these codes and the sum, following which the person gains access to a pay service source 14. The identification code can be provided in a similar manner. However, the identification code can be provided in many other ways, for example free to certain groups of persons or certain institutes. The operator can also provide identification codes for which the operator has already entered a debit sum, without others having paid for or needing to pay for them. The operator and contracting parties of the operator can, for example, provide such identification codes free of charge as corporate gifts, introductory gifts, or in order to meet a social need, for example if the service supplied by the service source 14 can be regarded as a helpline by the recipient of the identification code.

The user of the telephone 5 can thus acquire an identification code anonymously in various ways. As an alternative, during a first, free access the user can be given a provisional identification code for a corresponding service source 14, and the operator activates that code as soon as a payment is received for that code. The user may make the payment concerned into the appropriate bank account at any bank, so that his anonymity - at least as regards people other than the bank staff - is retained.

The operator could also offer identification codes for sale through shops.

In order to prevent misuse by bank staff or shop staff, the recipient of the identification code can be given the opportunity to change the identification code during a connection with the access unit 6, in particular by adding an element chosen himself.

With regard to the identification code, it is also pointed out that preferably it consists of a large number of characters, in order to prevent use by third parties, who could select a random identification code. It can also

be ensured that the identification codes provided by the operator meet certain arithmetical rules, so that persons wishing to misuse the codes cannot easily select an active identification code. Such arithmetical rules are generally known.

The user of the telephone 5 could use a memory unit (not shown), which is preferably portable, for storing the identification number obtained, which memory unit is provided with a sound generator and sound transmitter for communicating the identification number prestored in the memory unit to the access unit 6 via the mouthpiece of the telephone 5. Such a memory unit could be purchased in a shop with total anonymity by the user of the telephone 5, or could be supplied to him by others. When such a memory unit is used, there is no problem at all if there are a large number of characters in the identification code.

The identification code can be printed on a card or any other suitable data carrier and can be concealed by a substance which can be scratched or rubbed off by the final user of the card, for example using a coin or fingernail. This principle is known per se, for example for fortune cards or lottery cards. Such a card provided with an identification code can have further identification codes applied to it in the same way. The identification codes of the card in this case form a list, and for each desired access to a service source corresponding to the card the user exposes the next identification code and uses it as the new identification code. Depending on, for example, the length of the identification codes and the uniqueness of the identification codes, the card can also be provided with a card series code which is communicated by the user to the operator. The operator's computer contains the list of codes of each authorized card and can consequently check whether an identification code received, possibly with the card series code, can be a valid code or valid code combination, and on the basis of this it can decide whether or not the person seeking access is allowed access to the requested service. If relatively short identification codes are used on such cards, misuse through trying out short

codes can be prevented by demanding that more than one identification code be communicated to the operator, at least one of which codes has not been used before, for example a currently exposed identification code and one or more immediately preceding, already used identification codes. On reaching the end of the list, but also in the interim, the remaining debit sum connected with the card can be transferred by means of one or more identification codes not used before to the debit sum of another card, in the case of which identification codes have or have not already been used.

In addition to the use of the abovementioned identification codes, irrespective of whether the identification codes are printed on a card of the abovementioned type, the user thereof can be given the opportunity to link a personal identification code thereto, for example during the first telephone connection with the operator. This means that a person other than the rightful owner cannot make use of an accidentally acquired identification code, or of a stolen or lost identification code card. This also gives the possibility for a debit sum not entirely used up to be refunded by an institute designated by the operator, for example a bank or shop.

Such cards with initially concealed identification codes have the advantage that distributors authorized by the operator can keep the cards in stock, without them or other persons being able to transfer or otherwise copy identification codes for subsequent unlawful use. A potential rightful obtainer of such a card can refuse the card if all or some of the codes are exposed. The security for distribution of the cards can be increased further if the distributor is required to confirm to the operator the rightful transfer of the card by sale or issuing in another way, and that the card can be used validly only from that moment onwards.

The way in which the telephone system works for accessing a service source 14 according to Fig. 1 will be explained below with reference to the flow chart of Fig. 2.

In order to access a service source 14, a user

(caller) of the telephone 5 makes a connection via the telephone network 1 and the access unit 6 with the service source 14 (party called) (block 20). After the connection has been made, the telephone 5 is connected to the access code detector 9 of the access unit 6. If the access code detector 9 receives an access code in time (block 21), the access code detector 9 then checks the access code (block 22). If the detector 9 does not receive an access code in time, the detector 9 reports this to the control unit 8, following which the control unit 8 controls the selector 11 in order that the output connection of the line coupler 7 to which the telephone line 4 is connected can be connected to a special service source 14 to which the user of the telephone 5 temporarily gains free access (block 23). The control unit 8 monitors the time during which use is made of this special service source (block 24). This special service source can be equipped to supply introductory information, which can consist of one or more prestored messages. Alternatively, the special service source can be an ordinary telephone. After the free access time to the special service source 14 has expired, the control unit 8 generates a suitable message and places this on the telephone line 4, following which the control unit 8 breaks off the connection (block 25).

If after the telephone connection has been made the detector 9 has received an access code in time (block 21), the detector 9 (or the control unit 8, or the two combined) checks whether the access code received is correct, i.e. if it exists, and whether it is active, i.e whether a positive debit sum is linked to it, in other words if there has been a prepayment for use of this access code (block 22). If the result of this check is negative, the control unit 8 connects the telephone line 4 by way of the selector 11 to a suitable service source 14, in order to inform the user of the telephone 5 that the code is incorrect and possibly to furnish him with further helpful information. Since the control unit 8 was unable to link an active debit balance to the access code received, the use of the latter service source is, of course, free of charge (block 23).

If the decision of the checking unit (block 22) was positive, the control unit 8 checks whether the debit sum corresponding to the access code received, and paid in advance to the operator of the accessed service source 14, is adequate (block 26). This debit sum, combined with the matching access code, is kept up to date in the up/down valuator 10. Up valuation of the debit balance in the unit 10 can be carried out by the operator by means of any suitable input means.

If the debit sum corresponding to the access code received was insufficient, the control unit 8 generates an appropriate message and communicates it to the user of the telephone 5, following which the control unit 8 breaks off the connection with the telephone network 1 (block 25). The message to the user of the telephone 5 can be brief in this case, namely purely that the debit sum is insufficient and prepayment is demanded for use of the requested service.

If the debit sum corresponding to the access code received was sufficient (block 26), the user of the telephone 5 may be given the opportunity to make a selection from a number of available service sources 14; if there is only one service source 14, the telephone line 4 is connected directly to this service source 14 (block 27).

The possibly chosen service source 14 is then active, and the control unit 8 periodically reduces the debit sum corresponding to the access code received, which debit sum is stored in the up/down valuator 10 (block 28).

So long as the debit sum is adequate, the user of the telephone 5 remains in communication with the (selected) service source 14 (block 29). Otherwise, the control unit 8 generates a suitable message and communicates it to the user of the telephone 5, following which the control unit 8 breaks off the connection with the telephone network 1 (block 25).

Of course, the operation explained with reference to Fig. 2 is ended directly when the telephone connection is broken off by the user of the telephone 5 or by any other reason. The access unit 6 can recognize the breaking off of the connection and terminate the last deduction from

the debit sum, if applicable.

It is pointed out that when the invention is used a very differentiated tariff system can be used by the operator. The tariff, in other words, the speed at which the debit sum concerned is reduced, can be a sum per access provided to the service source or - possibly in combination - can depend on the duration of the access provided. In addition, the tariff can be set depending on:

- the level of the sum which is prepaid in one go to the operator;
- the number of access codes paid for in advance in one go;
- the duration of the communication with the (selected) service source, progressively decreasing or increasing depending on the service offered;
- free use for introduction of the system to the public by the operator;
- the type of service source selected (for example, advertising messages, or general information messages as against messages for pleasure);
- social factors of the user, for example when a social service institution is paying, while the anonymity of the user of the service is retained vis-à-vis third parties.

The system according to the invention has a number of advantages, a few of which have already been mentioned. A major advantage is that the telephone connection is an ordinary telephone connection with an ordinary telephone number (i.e. not what is known as a value-added service number) for which an ordinary call tariff is charged, i.e. the income is not divided between the operator of the telephone network and the operator of the service source.

Another major advantage is that the services can be used with anonymity. The telephone number of the access unit 6 is in fact a number which does not differ from other, ordinary telephone numbers, so that unless all calls are itemized, the use of the service will not be noticed in a bill from the operator of the telephone network 1, in which the costs for use of ordinary telephone numbers are separate from the costs for use of telephone numbers

connected with paid services (value-added service numbers - in the Netherlands beginning 06).

Yet another major advantage is that addiction to the use of paid services can be counteracted through use of the method. The user can in fact request the operator of the telephone network 1 to block access to all paid services with special telephone numbers intended for such services (value-added service numbers - in the Netherlands beginning 06), following which the user has access to these services only after prepayment of a sum. Since this means that the user will not subsequently receive unexpectedly high bills from the operator of telephone network 1 for the use of such services, a major barrier to excessive use of the services is produced.

Yet another advantage is that telephone subscribers are protected from misuse or otherwise of the telephone network 1 by others living in the house or by people breaking into the telephone network 1, resulting in bills with high sums for use of the special services selected via the special telephone numbers (value-added service numbers - in the Netherlands beginning 06). These subscribers can actually ask the operator of the telephone network 1 to block access to all such services, following which the operator of the telephone network 1 can no longer justify bills sent to these subscribers with such cost items.

A major advantage of the invention is also that the service sources 14 are accessible from abroad, because they are linked to ordinary telephone connections which are not confined to national boarders.

The system explained above, in which the telephone network 1 remains unchanged, can be implemented in adapted form as an alternative or, in addition, in a telephone exchange 30 of a telephone system, of which Fig. 3 shows a diagram. Of course, the system can comprise several telephone exchanges and communication channels. The telephone exchange 30 comprises line selectors 31 and 32, which can be integral. A telephone line 3 is connected between a telephone terminal, in particular a telephone 5, and the line selector 31. One group of telephone lines 33

for every suitable ordinary application is connected to the line selector 32. Another group of telephone lines 34 consists of telephone lines which are connected between the line selector 32 and respective service sources 14. Each service source 14 is considered to be provided with a line coupler here, just as was possible in the case of Fig. 1. The telephone exchange 30 has an access unit 35, which corresponds in terms of function to the access unit 6 of Fig. 1. The access unit 35 is connected to at least one output connection of the line selector 31, and at the output side is connected to one or more input connections of the line selector 32. The access unit 35 works essentially in the same way as the access unit 6 of Fig. 1, but internally within the telephone exchange 30, while the connections 34 of the system of Fig. 3 are telephone lines which are managed by the operator of the telephone exchange or of the telephone network, and are not connections which are managed by the operator of the access unit 6 as in the case of the system of Fig. 1.

It is pointed out that many modern telephone exchanges and subscriber telephone units, such as those used by operators of the abovementioned services, are digital computers which can be relatively easily reprogrammed for changing the performable functions, and thus the functioning of the device concerned. Partly after the explanation of the invention with reference to Fig. 2, it will therefore be clear that the invention can also be implemented through adaptation of the software in the computer concerned.

It is also pointed out that, although the term "debit sum" is used above and in the claims, this must be regarded within the scope of the invention as a prepaid number or quantity of access units, which can be expressed in currency units or permitted numbers of entries to the service source. In the latter case the control unit 8 does not reduce the debit balance per unit of time during which there is access to the service source (block 28), but per occasion that access is gained to the service source.

It is also pointed out that within the scope of the

invention the service provider, or the operator of a service source, can provide any type of service, including the supply of any type of digitized information or multimedia data by means of a computer of the service provider to a computer of the service seeker. In the latter case these computers can be linked via the public telephone network to other computers to form a geographically extensive computer network, such as Internet, a network to which the service seeker has access via an ordinary telephone line at an ordinary call tariff.

C L A I M S

1. Method for supplying a paid service within a telephone system from a service source (14) which is suitable for supplying a publicly accessible pay service to a telephone terminal (5), comprising a user of the telephone terminal making a telephone connection to the service source (14), **characterized in that** the user is given an access code, an operator of an access unit to the service source monitors a debit balance corresponding to the access code, in order to gain the desired access to the service source the user makes an ordinary telephone connection of a type to which an ordinary call tariff applies with the access unit, the user communicates the access code via the connection, the operator of the access unit checks whether the access code received is correct and allows access if the access code received is correct and the corresponding debit balance is sufficient, and in that the operator of the access unit reduces the debit balance according to the access provided to the service source, and breaks off the connection after the debit balance has become insufficient.

2. Method according to Claim 1, **characterized in that** the user can select access to various service sources (14) via the access unit (6, 35) using a single access code.

3. Method according to one of the preceding claims, **characterized in that** on receiving an access code which is incorrect, the operator of the access unit (6, 35) gives the user access to a free service source (14) for a predetermined maximum time, and the operator of the access unit (6, 35) breaks off the connection at the end of the predetermined time.

4. Method according to one of the preceding claims, **characterized in that** when an access code which is not active is received the operator of the access unit (6, 35) gives the user access for a predetermined maximum time to a free service source (14), and the operator of the access unit breaks off the connection at the end of the predetermined time.

5. Method according to one of the preceding claims, **characterized in that** the operator of the access unit (6, 35) sends the user a message relating to a reason for the connection, prior to breaking off of the connection.

6. Method according to one of the preceding claims, **characterized in that** the operator applies a tariff depending on the access time which has elapsed and reduces the debit balance accordingly.

7. Telephone terminal for connection to a telephone line (4) of a telephone system which has a telephone network (1) with at least one other telephone line (3) and another telephone terminal (5) connected thereto, while at least one service source (14) which is suitable for supplying a publicly accessible pay service is connected to the one telephone line (4), **characterized in that** the one telephone line (4) is an ordinary telephone line to which an ordinary call tariff applies, an access unit (6) is connected between the one telephone line (4) and the service source (14), the access unit (6) has means (8, 10) for storing at least one access code and a corresponding debit balance, the access unit (6) has means (8, 9) for receiving an access code via a line coupler (7) of the access unit (6) and the one telephone line (4) connected thereto and for comparing the received access code with the at least one stored access code, and means (8, 11) of the access unit (6) produce and maintain a connection between the one telephone line (4) and a service source (14) if the access code received is a stored access code and the corresponding debit balance is sufficient, while a control unit (8) of the access unit (6) reduces the debit balance according to the access provided to the service source.

8. Telephone terminal according to Claim 7, **characterized in that** the access unit (6) has a selector (11) and, depending on a command received via the one telephone line (4), the control unit (8) is capable of coupling the one telephone line (4) to a service source (14) corresponding to the command.

9. Telephone terminal according to Claim 7 or 8, **characterized in that** if the access unit (6) receives an

access code which is not also stored, the control unit (8) controls the selector (11) so that it connects the one telephone line (4) to a free service source (14) for a predetermined maximum time.

10. Telephone exchange (30) of a telephone system, comprising one or more line selectors (31, 32), by means of which telephone lines (3, 33, 34) are connected, at least one telephone line (34) of which is connected to a service source (14), and at least one other telephone line (3) of which is connected to a telephone terminal (5), **characterized in that** the at least one telephone line (34) is an ordinary telephone line, to which an ordinary call tariff applies, the telephone exchange has an access unit (35) which is connected between the line selectors (31 and 32), the access unit (35) is connected between the telephone line (34) and the service source (14), the access unit (35) has means (8, 10) for storing at least one access code and a corresponding debit balance, the access unit (35) has means (8, 9) for receiving an access code via a line coupler (7) of the access unit (35) and the at least one other telephone line (3) connected thereto, and for comparing the received access code with the at least one stored access code, and means (8, 11) of the access unit (35) produce and maintain a connection between the one telephone line (34) and a service source (14) when the access code received is a stored access code and the corresponding debit balance is sufficient, while a control unit (8) of the access unit (35) reduces the debit balance according to the access provided to the service source.

11. Telephone exchange according to Claim 10, **characterized in that** the access unit (35) has a selector (11) and, depending on a command received via the one telephone line (34), the control unit (8) is capable of coupling the one telephone line (34) to a service source (14) corresponding to the command.

12. Telephone exchange according to Claim 10 or 11, **characterized in that** if the access unit (35) receives an access code which is not also stored, the control unit (8) controls the selector (11) so that it connects the one

telephone line (34) to a free service source (14) for a predetermined maximum time.

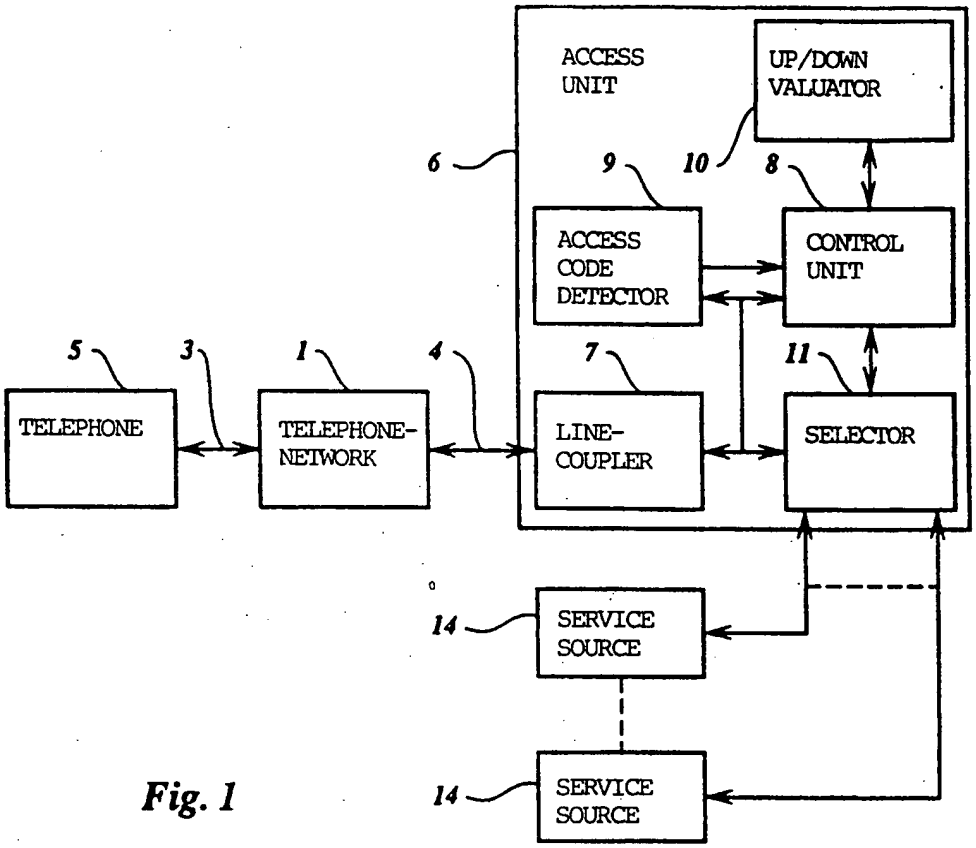
ACCESS UNIT
UP/DOWN VALUATOR
6
9
10
8
ACCESS CODE DETECTOR
CONTROL UNIT
5
3
1
4
7
11
TELEPHONE
TELEPHONE-NETWORK
LINE-COUPLER
SELECTOR
14
SERVICE SOURCE
14
SERVICE SOURCE

Fig. 1

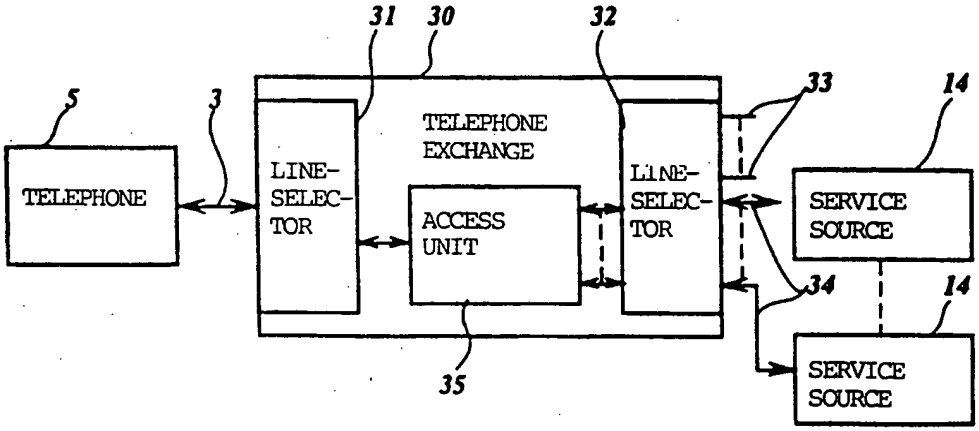
31
30
32
33
14
5
3
TELEPHONE EXCHANGE
TELEPHONE
LINE-SELEC-TOR
ACCESS UNIT
LINE-SELEC-TOR
SERVICE SOURCE
34
14
35
SERVICE SOURCE

Fig. 3

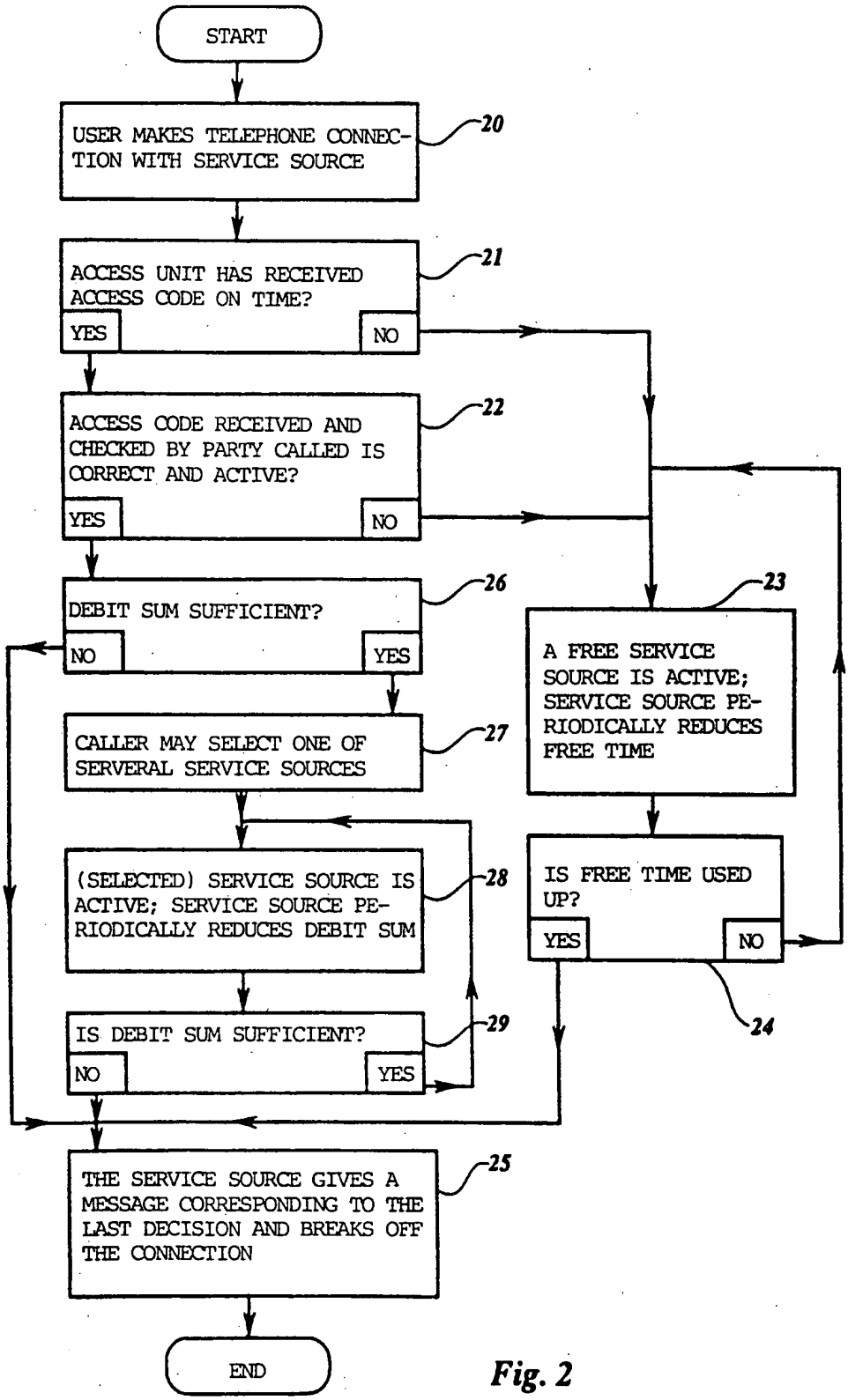
START
USER MAKES TELEPHONE CONNECTION WITH SERVICE SOURCE
20
ACCESS UNIT HAS RECEIVED ACCESS CODE ON TIME?
21
YES
NO
ACCESS CODE RECEIVED AND CHECKED BY PARTY CALLED IS CORRECT AND ACTIVE?
22
YES
NO
DEBIT SUM SUFFICIENT?
26
NO
YES
A FREE SERVICE SOURCE IS ACTIVE; SERVICE SOURCE PERIODICALLY REDUCES FREE TIME
23
CALLER MAY SELECT ONE OF SERVERAL SERVICE SOURCES
27
(SELECTED) SERVICE SOURCE IS ACTIVE; SERVICE SOURCE PERIODICALLY REDUCES DEBIT SUM
28
IS FREE TIME USED UP?
YES
NO
24
IS DEBIT SUM SUFFICIENT?
29
NO
YES
THE SERVICE SOURCE GIVES A MESSAGE CORRESPONDING TO THE LAST DECISION AND BREAKS OFF THE CONNECTION
25
END

Fig. 2

INTERNATIONAL SEARCH REPORT

Interna l Application No
PCT/NL 95/00212

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 H04M3/38 H04M17/00 H04M15/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NL,A,9 201 010 (ROGER ROY ROGER DE CAMPAGNOLLE ET AL.) 3 January 1994 see the whole document	1,7,10
X A	US,A,5 148 474 (HARALAMBOUPOULOS ET AL.) 15 September 1992 see the whole document	1,2,5-8, 10,11 3,4,9,12
X A	EP,A,0 438 860 (AT&T) 31 July 1991 see column 2, line 27 - line 51	1,2,5-8, 10,11 3,4,9,12
A	EP,A,0 572 991 (FROMER,SHMUEL) 8 December 1993 see column 2, line 55 - column 3, line 6	1-12

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 September 1995	06.10.95

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl, Fax (+ 31-70) 340-3016	Montalbano, F

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INTERNATIONAL SEARCH REPORT

Interna l Application No
PCT/NL 95/00212

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	AT & T TECHNICAL JOURNAL, vol. 69, no. 5, September 1990 NEW YORK US, pages 61-76, XP 000224080 D.R.FISCHELL ET AL. 'Interactive voice technology applications' see the whole document	1-12
A	EP,A,0 491 497 (AT&T) 24 June 1992 see the whole document	1-12
A	US,A,4 706 275 (KAMIL) 10 November 1987 see column 1, line 62 - column 2, line 5	1-12
A	EP,A,0 494 530 (STRATEGIC TELECOM,INC) 15 July 1992 see abstract; figure 1	1-12

INTERNATIONAL SEARCH REPORT

...ormation on patent family members

Intern... ...l Application No
PCT/NL 95/00212

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
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US-A-5148474	15-09-92	NONE		
EP-A-0438860	31-07-91	US-A-	5109408	28-04-92
		JP-A-	3186048	14-08-91
EP-A-572991	08-12-93	NONE		
EP-A-0491497	24-06-92	US-A-	5187710	16-02-93
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		JP-A-	4307828	30-10-92
US-A-4706275	10-11-87	NONE		
EP-A-0494530	15-07-92	AU-B-	1499895	25-05-95
		AU-A-	8986091	16-07-92
		CA-A-	2058657	12-07-92
		JP-A-	5048757	26-02-93
		US-A-	5323448	21-06-94
		US-A-	5333181	26-07-94